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CARNEGIE

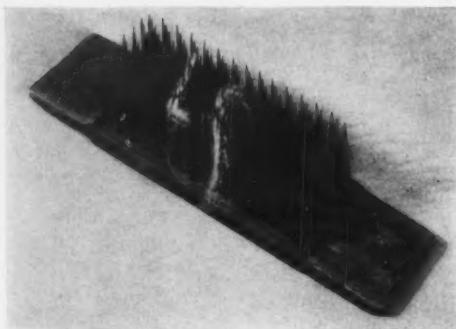
MAGAZINE

June 1953
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The Economy of 17th Century America

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Flax heckle commonly in use during home-manufacturing period of early Colonial days. From the collection of the Carnegie Museum.

WHEN THE TEMPO of commercial activity increases in a country, there is a corresponding need for increased circulation of money.

During 17th century American Colonial days, settlers were forced by the shortage of English coins to use Dutch guilders, Portuguese joes, Spanish doubloons and other types of foreign money. But there was still a shortage of coins.

So, it became a generally acceptable trade practice to use Indians' wampum. Littering the eastern shoreline was an abundant supply of shells from which wampum beads were made. However, a laborious process was required to assemble the highly polished wampum beads. This placed a limit on the amount of wampum in circulation.

Wampum was declared legal tender in Massachusetts and, as late as the end of the 17th century, was the principal money of New York.

From that era of crude improvisation, the monetary system of the United States, supplemented by modern banking practices, has progressed to its present flexible form that meets the expanding economic needs of our society.

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COVER

The cover design was furnished by a shed skin of the pilot black-snake, the biggest snake in Pennsylvania and biggest nonpoisonous snake in United States, which rejoices in the scientific name of *Elaphe obsoleta obsoleta*. The shiny solid-black adult may, but rarely does, reach a maximum length of eight feet five inches.

Blacksnakes occur all over the State, but are most common in the mountains. The damage they do to our bird population is more than balanced by valuable service as exterminators of rats and mice. This snake is called "pilot" because of a widespread but ill-founded belief that it guides rattlers and copperheads to safety.

CARNEGIE MAGAZINE, dedicated to literature, science, and art, is published monthly (except July and August) at 4400 Forbes Street, Pittsburgh 13, Pennsylvania, in behalf of Carnegie Institute, Carnegie Library of Pittsburgh, and Carnegie Institute of Technology. James M. Bovard, editor; Jeannette F. Seneff, editorial assistant; Florence A. Kemler, advertising manager. Telephone MAYflower 1-7300. Volume XXVII Number 6. Permission to reprint articles will be granted on request. Copies regularly sent to members of Carnegie Institute Society. Subscription \$2.00 a year. Single copies 25 cents.

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SUMMER CALENDAR

FINE ARTS

CURRENT: Original drawings from *Punch*, the British humor magazine, continue on display on the second floor through June 14. Malcolm Muggeridge, the new editor-in-chief of the weekly, came to Pittsburgh for opening of this exhibit on May 14.

The exhibit of thirty canvases including purchases from the 1952 Pittsburgh International continues in the new Gallery of Contemporary Art until July 1. This third-floor Gallery will contain a continuous exhibition of modern material where the visitor may expect to find changes as new material is added and borrowed is withdrawn.

CONTINUING: In the decorative arts hall may be seen the medieval champlevé objects given by Mrs. J. Frederic Byers, ivories from the Henry J. Heinz collection, silver from the DuPuy and Edwards collections, as well as other objets d'art from the DuPuy collection and a group of early American and English silver lent by Aims C. Coney, of Pittsburgh.

Paintings from the permanent collection are regularly displayed in Galleries A, B, C, on the second floor.

On the balcony of the Hall of Sculpture drawings from the permanent collection will be succeeded on July 1 by prints from this collection.

EDUCATION

ARTS AND CRAFTS CLASSES: Adult classes in painting, jewelry-making, photography, and fly-tying will conclude June 13.

SUMMER NATURALISTS: Free nature classes for six- to sixteen-year-olds will be held Mondays and Wednesdays July 6-29. Morning session, 10:00 o'clock; afternoon, 1:30. In clear weather, Schenley Park; rainy days in the Museum.

GUIDE SERVICE: Arrangements may be made through the Division of Education for groups to visit both Museum and Fine Arts departments of the Institute, with a guide.

TELEVISION: Library staff members continue giving book reviews Fridays at 10:00 A.M., over WDTV during June. Teen-agers will give the reviews for July and August, under Library staff supervision.

MUSEUM

CURRENT: Prehistoric Pennsylvanians, based on the Museum's Upper Ohio Valley Archeological Survey, is an exhibit on the first floor; also Museum Backstage, a display of staff artists' and preparators' work; and PPL Self-Portrait.

This last, a new exhibit continuing until August, will feature the ultra-modern laboratory of the Pittsburgh Photographic Library at the University of Pittsburgh, its master file containing some twenty thousand negatives, and, as examples of its current work, a selection of new and unpublished photographs of the Civic Light Opera.

CONTINUING: Permanent exhibits include, on the first floor, Dinosaur Hall and the Hall of Invertebrates, featuring Life under Water; on the second, the Halls of Botany and North American Mammals; on the third, Plains Indians and the Transportation Exhibit.

COMING: Exhibits being completed are The Ancient Near East, third floor rear, and the first-floor Hall of Fossil Mammals, where a revolving mural that covers 75 million years of evolution will be shown.

MUSIC HALL

The organ recitals by Marshall Bidwell each Sunday afternoon at 4:00 o'clock will continue through June 28 and be resumed on October 4. These recitals are sponsored by the Arbuckle-Jamison Foundation.

LIBRARY

EXHIBITS: The Coronation theme will be carried out in exhibits with related books in Lending Department and the Boys and Girls Room.

Polynesian art and Chinese ivories and jades may be seen in the Public Affairs and Art Rooms during June and July.

Photographs of Dinosaur National Monument, taken by Philip Hyde and lent by the Sierra Club, will be shown in the Library foyer during June.

STORY HOUR: Stories for children of all ages will be told in Boys and Girls Room, Wednesdays at 2:30 P.M., during July and August.

VACATION BORROWING: Ten books (not including current best-sellers) may be borrowed for the summer. The loan period is June 1 to September 15.



PUBLIC RELATIONS OF THE PROFESSOR

J. C. WARNER

THE relations between a professor and his various publics are of tremendous importance. If they are good, they lead to mutual respect and understanding and make it possible for the professor to make his maximum contribution to society. The opinions which these publics hold in the aggregate for all the professors of a university will determine, more than anything else, the reputation and distinction of the university. Thus, in the aggregate the public relations of the professors are reflected in the support their institution receives—for faculty salaries, for fundamental research and other scholarly and creative activities, for buildings and facilities, and in the quality of the student body. Good relations between the administration of a college or university and the public are important, of course, but these would be of little avail without a faculty which was held in high esteem. The most able and brilliant college president, skilled in the art of public relations, cannot build respect and win enduring support for his institution without a faculty made up of men and women highly regarded as teachers, scholars, and good citizens.

On a national scale, the summation of the relations between the individual professors and their publics will in large measure determine the esteem with which professors as a class are regarded by society, and will determine the extent to which society will value higher education and scholarship, and support the institutions that provide it.

What then are the "publics" from whom the professor should strive to deserve esteem? I believe the most important are the following:

1. The students in his classes.

2. His colleagues throughout the nation and the world in his chosen field of teaching and research.

3. The leaders in business, the professions, government, and the ordinary citizens in his community.

All of us know many professors who are held in high regard by all these publics; they are respected and admired by present and former students; they have distinguished reputations as scholars among their colleagues; they are consulted by leaders of business, the professions, and government because they can contribute wisdom and knowledge to the solution of problems; and they have won the respect of their fellow citizens in their own community through showing an awareness of their own responsibilities as citizens.

But the percentage of professors who are thus highly regarded by all their publics is too small. In my view, it is very important for the national welfare that the percentage be increased substantially.

May I now suggest some ways in which the relations of the professor may be improved with each of these publics?

RELATIONS WITH STUDENTS. I can recall a few professors who had a great influence on me. I respect and admire these men. They were competent scholars in their field; they came to class prepared; when they spoke they could be understood; they guided my thinking but I was required to do the thinking; they insisted on a thorough understanding of basic principles and theories, and then presented me with new situations that could be met by the application of these principles and theories. They had an enthusiasm for their subject that was contagious, and they taught, they did not indoctrinate. They were not the easy

professors and quite frequently they were not the popular professors—but, by and large, they were men who could “lay it on with a smile.” If you find out which professors are sought out by distinguished alumni when they return to the campus, you will know the professors who have won the respect and admiration of one important segment of their public—the thousands of students who have attended their classes.

RELATIONS WITH COLLEAGUES. I presume a professor may be respected and admired by his colleagues in his own college and possibly in a much wider area including other colleges if he is a stimulating teacher and can contribute ideas which will have a beneficial effect on the teaching of others. I question, however, whether in the long run a professor can remain a stimulating teacher without doing some productive scholarly work in his chosen field. Certainly significant contributions to knowledge through fundamental research loom as very important in establishing good relations between a professor and his professional colleagues in other colleges and in industry. To be sure, there are some professors who seek personal prestige in everything they do; who spend too much time trying to prove that they deserve priority on an idea or discovery; who are not as objective as they should be in their research and scholarly work; who are pompous and enjoy engaging in fruitless controversy as a mode of self-expression; and who are harsh in their criticism of younger colleagues instead of being helpful. My experience indicates that these professors constitute a very small minority. The vast majority are scholars devoted to the search for knowledge and its impartial dissemination to students.

I am sure that good relations between the professors in a college or university and their professional colleagues throughout the nation and the world are of first-rate importance.

TOWN AND GOWN. The relations between the professor and his community public may be labeled “relations between Town and Gown.” Differences in point of view, lack of mutual understanding, and something less than complete mutual confidence in each other have characterized the relations between Town and Gown for many centuries. It is the function of the scholar-teacher to discover new knowledge and to disseminate knowledge. Thus the good scholar-teacher, or professor, is bound to be an innovator, whereas many, but not all, of the leaders in his community will have an interest in preserving the status quo. The situation is further complicated by the fact that some leaders in the community will be powerful advocates of innovation in some fields of human activity and quite as determined to preserve things as they are in others. As individual scholar-teachers formed communities or schools which became our universities and centers of learning, all people became more aware of the Town and Gown relationship. The extent to which these two groups have found themselves “out of tune” has varied greatly over the years—from complete harmony to complete dissonance. When people are under stress because of dangers from within and

President Warner of Carnegie Institute of Technology himself fulfills a varied public relations role. His article is an after-dinner address given this spring at Pennsylvania State College. He serves on the general advisory committee to the Atomic Energy Commission, is a director of Jones & Laughlin Steel Corporation and of the participating institutions of the Argonne National Laboratory.

He is a member of the boards of the Allegheny Conference on Community Development, Pittsburgh Playhouse, Civic Light Opera Association, and Pittsburgh Symphony Society and has just finished a one-year term as president of the Electrochemical Society.

On invitation by the Tata Iron and Steel Company, Ltd., he delivered the Perin Memorial Lectures at Jamshedpur, India, the past two years. He also addressed the Indian Science Congress in Calcutta.

dangers from without, dissonance may arise to a mighty roar of noise.

In the United States, during the past quarter century at least, we have been under stress—we have been worried about the preservation of our free society. Internally we have feared the consequences of depression, inflation, subversion, and big government which has tended more and more to control our lives and activities. Externally we fear aggressive world Communism and the infliction of Fascist regimes on many peoples who formerly were free. And there is evidence of considerable dissonance as we listen to the Town and Gown Symphony—an investigation of universities for subversives and fellow travelers is under way by a Congressional Committee; Buckley's *God and Man at Yale* won a big audience; a goodly number of professors in the social sciences, humanities, law and theology are accused of being too leftish to serve the best interests of our society, if not downright subversives. And a few professors in the physical and biological sciences are likewise accused or under suspicion. I am sure our professors are not universally and to a man without blame, but I am convinced that the vast majority of them are extremely loyal citizens devoted wholeheartedly to the preservation of our free society and to the attainment of the goals of western civilization.

Most of us who listen to contemporary music find dissonance stimulating and interesting if it is resolved into harmony at intervals of sufficient frequency.

Dissonance brought about by the discovery of new knowledge and the dissemination of this knowledge and the ideas that result from it will be stimulating and lead to progress in our society if Town and Gown can, at sufficient intervals, resolve the dissonance into the harmony of common goals and objectives. I believe you will agree that both groups

should approach the problem with good intentions. I would like to make some suggestions to the professors: First—The professor should not mention academic freedom without mentioning academic responsibility. There will be no academic freedom unless society has confidence in our scholars and teachers. If professors conscientiously accept academic responsibility, society will have confidence in higher learning. What does academic responsibility imply? I believe it means that the professor can not claim academic immunity for his statements or pronouncements inside or outside the classroom or laboratory; I believe it means he must not claim that his university connection and responsibilities should be ignored in judging his public utterances and behavior; I believe it means presenting all sides of a controversial subject; I believe it means the professor is not free to use his classes as captive audiences for advocating his own subjective views; I believe it means he must teach and not indoctrinate; and I believe he must be willing to take part in evaluating the competence, reliability, and responsibility of his fellow professors.

Second—The professor should not assume or pretend that just because he has deservedly earned a great reputation as an authority in some scholarly field, such as physical chemistry, he can without objective study make an authoritative pronouncement about the proper solution to a public problem and that his opinion thus given has any more value than the snap judgment of the ordinary citizen. Professors, of course, have all the rights and responsibilities of other citizens and hence should play an active part in the solution of public problems. Indeed, it seems to me that professors have a special obligation because part of their job is to see to it that oncoming generations of students develop such disciplines and such sets of moral, ethical, and

spiritual values as will serve them well in finding solutions to the problems they encounter as citizens. I do not believe the professor can fulfill this obligation without himself accepting an active role as a citizen. I only ask that the professor study public problems before he states his conclusions and that he bring to his study the same objective attitude he practices as a scholar.

The special obligation of professors of science and engineering and their professional colleagues throughout our country deserves some emphasis because in our complex society, based more and more on science and technology, our public problems very frequently contain scientific-technological elements. Hence, of necessity, we must rely more and more upon our citizens who are trained in science and engineering for help in their solution. Our professors of science and engineering must assume the obligation of becoming more literate in the areas of govern-

ment, business, and human relations.

Third—The professors should make a more positive effort to understand the achievements and problems of Town. Town has been bold, venturesome, hard-working, and efficient in applying scientific knowledge to the development and operation of a productive system that gives all of us a standard of living and an opportunity for scholarly and creative work which was undreamed of a century ago. Some leaders in Town have been as objective in their attack on problems and as ardent in their search for the truth as the professors. And some leaders in Town have been innovators too: Charles E. Wilson was not being an orthodox business man when he decided to try an entirely new approach to labor-management relations in the world's largest manufacturing enterprise.

May I mention a few things which Town could do to insure that we will not need to wait too long to hear dissonance resolved into

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harmony in the Town and Gown Symphony.

Town should have more patience with Gown and make the same effort at understanding that I have advocated for the professors. Town should let Gown hunt out its own subversives, fellow-travelers, and incompetents. This will always take time, but Town must recognize that Gown does not have access to F.B.I. files, nor the prerogatives of the courts or the prosecutors. A study of history should convince Town that just as "a few fleas are good for a dog," some heresy or unorthodoxy has been good for our institutions and has led to progress in our civilization. This has been especially true of new ideas and new points of view which have arisen from the replacement of superstitions by knowledge. I believe Town should make a real effort to understand the difference between heresy and subversion. We need not fear heresies but we can not, of course, tolerate subversion.

I have mentioned that unorthodox ideas have frequently been good for our institutions and led to progress in our civilization. Frequently ideas that seem unorthodox are a stimulus for the re-examination of the purposes and objectives of our institutions, and lead to changes which bring them in line with the realities of each age. Unorthodox ideas that have sufficient merit to win out in free debate and discussion have a way of becoming the conventional ideas of the next generation. I was much interested to learn that when a bill was first introduced into the Legislature of the Commonwealth to provide for our system of free public education, it was strenuously attacked as an extremely socialistic measure and was enacted into law by a very narrow margin. Attack on the new school law as a socialistic measure was extremely active, and a bill to repeal it in the next Legislature failed to pass by a margin of only one vote.

In the area of fostering mutual understanding between the University and its community, the Board of Trustees can be of great service. In my opinion every trustee should make a real effort to understand the scholar-teacher function and to understand the University's obligation as a center of learning. If he does, he can be of great help in explaining the University and its purposes to the community. Trustees also have a real contribution to make in explaining the achievements and the point of view of the outside world to the University community. Thus it seems to me that the Board of Trustees can make a very substantial contribution to the harmony between Town and Gown.

In conclusion, may I summarize by saying that good relations between professors and their various publics are of critical importance to the welfare, preservation, and progress of our free society, and in the aggregate they lead to respect, admiration, and support for professors as a class and for higher learning. It is pretty easy to outline the conditions which lead to good relations between the professors and their students and professional colleagues. With these publics, I believe the professors have it within their power to establish good relations. The Town and Gown relationship is much more complex and hence much more difficult to analyze. Although the professor can and should do many things to promote good relations in his community—and I believe I have suggested the most important things he should do—the situation is not wholly within his control. Town should recognize that because of the very nature of the teacher-scholar's function in society there is bound to be dissonance at times, and Town should be willing to do its share to resolve dissonances into those great harmonies which represent new vistas, new opportunities, and great strides forward in mankind's struggle to reach the stars.

MODERN MOODS AND MODERN QUESTS

Reviewing "Confessors of the Name," a novel that speaks from the past

SOLOMON B. FREEHOF

EARLY in the nineteenth century there was a famous German-Jewish journalist and pioneer socialist, Moses Hess. He wrote a book which he entitled *Rome and Jerusalem*. I cite the book not because its content has any relevance for us today but because its title is a key phrase for our discussion. "Rome and Jerusalem" sounds as if there were a contest, a struggle between the spirit that is embodied in the name "Rome" and that which is embodied in the name "Jerusalem."

On the face of it, the phrase is a pretentious one. How can one compare the majestic power of Rome with the power of Jerusalem? Rome is the eternal city, the capital of classic civilization and the symbol of earthly strength, and of that first enduring world empire whose laws and whose engineering and whose social methodology have left a permanent impress upon the history of the western world. Jerusalem was an oriental city in a tiny corner of the Levant, and never represented any real world power. Rome and Jerusalem, indeed!

In the year 70, when Titus completed the little skirmish campaign of his father Vespasian and conquered the provincial city of Jerusalem, he had medals struck off with the legend, *Judea Devicta*, that is, "Judea conquered"; "devicta" crushed in defeat. It seemed an obvious fact to the great Roman power that this little nation with its unimportant capital and its strange little Temple should be "Devicta," defeated and crushed. If there was a triumphal procession it was not because of the importance of the provincial victim but because the Roman general loved to have triumphs. Neverthe-

less, in spite of the grandeur and the overwhelming power of Rome and the secluded unimportance of Jerusalem, the contest between Rome and Jerusalem became a significant one.

This, no one at the time could have predicted. The people of Judea scattered over the Roman Empire, settled as slaves in Rome, and gradually achieved the status of freed men. They established one or two synagogues and lived and outlived the Roman Empire. A minor sect from the vicinity of Jerusalem, a little group of untutored Galilean fishermen who followed the son of a certain Joshua, son of Joseph, a Galilean carpenter, founded a little sect, the first twelve of whose fourteen bishops were Jews and ate their meals according to the Jewish dietary laws. This minor sect of this minor Judean people was persecuted by the great Roman power and driven into the catacombs and into the garrets of the Roman tenements and out into the forest surrounding Rome. Yet it lived—this little handful—to come down from the garrets and up from the catacombs and in from the forest and to set its bishops on the throne of the Caesars and to extend its sway to lands undreamed of by the Roman Emperors.

Thus, the contest between Rome and Jerusalem was not as absurd a one as the juxtaposition of the words would first lead an untutored person to believe. Actually the struggle between Judaism and Rome, Christianity and Rome, or Judeo-Christianity and Rome is one of the symbolic struggles in the history of man. It portrays the eternal contest between material might and spiritual power.

It means the struggle between things and thoughts, between what can be seen and touched and that which must be felt to be apprehended, between the outward visible form and the inner spiritual grace.

This old struggle between ancient Rome and ancient Jerusalem was therefore always remembered. The original contest between the handful of Jewish slaves, the scattering of Christian sectaries, against Imperial Rome remained in the thought of the world as the eternal symbol of that eternal struggle between the outer and the inward. As far as Jews were concerned, they called Rome "Edom," which is another name for Esau, and they saw in their own struggle with the Roman might the old struggle between Jacob and Esau; although Esau had the might, although all the oppressing tyrants had the might, Jacob and they had the spirit and the aspiration and the prayer.

As for Christians, they kept the memory of the old struggle alive all through the ages. They wrote down the story of every martyrdom, they remembered each successive persecution because it was to Christians as it was to Jews the symbol of the conviction that the physically weak if they are spiritually strong will overcome the physically strong if they are spiritually weak. So martyrologies, books on martyrs, the story of Rome and the Colosseum and the catacombs were told over and over again in order to prove and re-demonstrate for Christianity the verse in the old spoken Testament, by the Prophet Zachariah, "Not by (material) strength and not by (physical) might, but by my spirit sayeth the Lord of hosts."

In the eighteenth century, from the middle of the 1700s on, the classic theme of Rome and

Dr. Freehof's article is the fourth to appear this year in *CARNEGIE MAGAZINE*, derived from his very popular series of lectures on current best sellers given each autumn at the Rodef Shalom Temple.

Jerusalem began to lose its savor and magic hold over the minds of people because the relationship of the inner to the outer, of the world of things to the world of the spirit suddenly changed in that century. Up to then the Biblical religions were considered symbolic of the spirit and the idealism of man, while the outer world, the world of power and of tyrants and of persecutors, the secular governmental world, the world of things, this world was considered as symbolized by the power of Rome. But things had changed. It was the dawn of the modern spirit and there was a new attitude to physical nature. It was the beginning of modern science and people began to look upon "things" and the understanding of "material objects" as the source of potential blessings. Even the State—which in feudal times meant as in Roman times imperial tyranny—began to be the vehicle of a dawning democracy, particularly after the American Revolution, then after the French Revolution. So, whereas government had meant tyranny in Rome, government in the modern world began to mean science and democracy. Contrariwise the church, which hitherto had been considered as the guardian of the spark of the spirit, became symbolized as the dark medieval tyranny.

So, as it were, the church became Rome and the outer secular world became the spirit. That was the mood of the so-called enlightenment of the eighteenth century. In that century the Rome-Jerusalem theme was turned on its head by a young English historian, Edward Gibbons. This child of his time wrote his magnificent, if sardonic history, *Decline and Fall of the Roman Empire*. When the first volume of that book appeared it created a sensation. The printers could not print fast enough. People who never bought history before bought that history book chiefly because of the still famous 15th and 16th chapters. In modern editions it is the 15th and 16th

chapters in the second volume in which he gives an entirely new version of the relationship of Jerusalem to Rome or Judaism-Christianity to the Roman Empire. In the spirit of the new time in which religion was deprecated and the material world newly honored, he makes Rome as it were the victim, not the brutal oppressor of Christianity and Judaism. He does this by brilliant sardonic writing. While he does not denounce Christianity and Judaism openly or praise Rome too lavishly, yet by brilliant adroitness, by ludicrous overstatement on the wrong side, he manages to convey his ideas clearly enough. His two famous chapters created a large controversial literature.

His general theme was: Christianity took over from Judaism its stubbornness, its exclusiveness, its haughty insistence that it alone had salvation and therefore it withdrew from co-operation with the pagan world. Thus, the Christians in Rome became a government within a government and would not participate in any of the patriotic governmental functions. Christians were taught that the world was coming to an end anyhow—and indeed they saw clear evidence that the Roman world was coming to an end. As for the persecutions, these were highly exaggerated. Romans did not want to persecute anyone. Sometimes the Christians, in their eagerness to reach the world of paradise, virtually threw themselves into the hands of the Roman officers. In other words the Romans were decent, good-natured, cultured pagans, while the Christians, like the Jews from whom they were derived, were narrow fanatics who longed for another world. They anticipated with joy the collapse of the Roman Empire. No wonder they were not liked. This is Gibbons' general thesis and this became the opinion of most sophisticated people. In other words, the old Rome-Jerusalem theme was turned on its head.

Then about 1895, approximately, the theme returned in its old classic form. A Pole, Sienkiewicz, wrote *Quo Vadis*, in which he took up the old Rome-Jerusalem battle. The Roman Empire was again described as cruel, collapsing; the Christians pure, persecuted, and outlasting Rome. How could a modern after Gibbons come back to the old classic way of treating the theme? Perhaps it was because he was a Pole. To him the outer world was not as glorious as to an Englishman living during the Enlightenment. The Government was the Czarist autocracy, which to him looked like the brutal Roman Empire, and the Polish idealism was being crushed, which reminded him of the Christians in the catacombs. *Quo Vadis* was the only comparatively modern revival of the old Roman-Jerusalem theme. After Sienkiewicz the theme was tried tentatively in one or two other novels.

Then suddenly in this year 1952 we have three novels rising over the horizon like a triple star, three novels resuming the old classic form of the Roman-Jerusalem theme! Why just now? What impelled three writers to feel drawn to this old question just in these modern days? Perhaps it is that the atmosphere of our age brings us back to the old classic formulation of the subject. Our world has suddenly become as shaky as was the old Roman Empire, cracking under the hammer blows of the barbarians from the north; and we modern people are perhaps looking for some noble belief that will assure us that human culture can survive the catastrophe that seems so near. Because the old confidence of the 1700s in the outer world and its governments has been shaken anew and because we are looking once more for some sort of spiritual guidance, the theme has revived in our day.

There is Costain's, *The Silver Chalice*, which is set a little earlier, in the time of Paul of

Tarsus and takes place chiefly in the east. Then there is the latest of the three, *The Sinner of Saint Ambrose* by Raynolds, placed about the time of the Emperor Theodosius, about the year 350, and there is Gladys Schmitt's *Confessors of the Name* half way between the two, about the year 220, in the time of the Emperor Decius. All three novels are good; each of the three has uniqueness. Our concern is with the central one, Gladys Schmitt's *Confessors of the Name*, a highly complicated, intricate plot but one which is nevertheless clear and remains absorbing.

Now on the face of it this is just another one of the Quo-Vadis, Roman-Jerusalem themes. Yet it is in many ways unique. In the first place Gladys Schmitt has clearly done a great deal of honest research. One does not have to be a Latinist or an expert classicist to see that the author has read carefully and widely. In the very first part of the book the description of the games in honor of the deceased father Celestius is perfectly done. She knew exactly how the chariots rode along the rim of the sand, how the family sat in the box, and the signals they had to give. She understands precisely how the warriors were attired and armed, the gladiators who fought each other, how the battle was conducted, how the policies were laid out, how the receptions were conducted in the palaces, and so forth. There is a feeling of circumstantial reality, the fruit of a great deal of research. It is as pleasant a way of learning Roman history as one can find.

Different from her predecessors in dealing with this theme, Gladys Schmitt is clearly influenced by Edward Gibbons. She shows a little of the sardonic touch of Edward Gibbons in her description of the events. It is strange that she who reverted to the classic theme of Jerusalem overcoming Rome, nevertheless is affected by Gibbons' treatment. Gibbons was very anxious to show that those

Christians were not all sane, that there was evil in them, there was stubbornness in them, there was intolerance of fanaticism in them, and she shows all of that. Some of her Christians are cowards; they become pagans again in order to save their lives. Those who are not cowards are moved by all sorts of mixed motives. Even the heroine Paulina is moved to action in order to purify her soul of a sin, of a physical sin. She becomes a martyr not to testify to her religious beliefs. Yet precisely that touch of Gibbons' sardonic mood adds to the reality and the convincing power of the novel. We modern people cannot stand sweet things any more. If all the Christians were pure as driven snow and all the Romans were wicked, it would again be one of those sweet, sweet books that we can no longer read. Because she shows human weaknesses in those who centuries later became heaven-dwelling saints, she adds a realism which is acceptable to our modern taste and becomes the basic theme of the book.

This theme is not too clear at first. You have to read the ending over again. The noble young Roman Favorinus—is he the hero of the book? Presumably. Is he, therefore, the symbol of something? What does he represent? How do we understand his actions? It is a peculiar kind of action. Here is a man who is skeptic. He has marched through the various philosophies and he read the gospels and cannot accept Christianity either. So he is a skeptic. Yet this skeptic lays down his life in emulation of Jesus of Nazareth in order to bring spiritual salvation to his deceased cousin Paulina. What a strange combination of mood and motive! Skepticism in the mind, martyrdom in action. This combination has not appeared before. It is an original combination and, I submit, it is a brilliant combination. The author had said something deeply real about the modern spirit and depicts the figure of the Skeptical Saint!

Skepticism has corroded the soul of all moderns. The simple unquestioning belief is found in very few adults in these troubled times. Our theology is shaky. God comes and goes in our consciousness, now He is real, now far away. Therefore, the confession of religion comes only haltingly to our lips. Yet we are still the beneficiaries of thousands of years of Biblical influence. The ethics which grew on the soil of Biblical philosophy still has its fruitage in our life. It may not last many generations unless the soil of belief is refertilized to make it grow, but its fragrance is still with us. The flower of kindness, of truth, of brotherhood, grew out of the soil of Scriptural philosophy: the belief in one and only one God; as corollary, the belief in one mankind. The flower of universal love grew in that soil. We still have the flower. Our ethics however is a cut-flower ethics. The flower that is cut from the soil is still fragrant and still for a while beautiful, but will not endure. Some day there will have to be a re-planting and regrowth. But we have considerable decency left for the present. Thus, without the faith, the action of martyrdom is possible for us. That describes exactly our present mood as embodied in the young Roman patrician.

Gladys Schmitt has one of the girls, the young slave girl who also loved her Favorinus, describe the vision that came to her at the moment that Favorinus is beheaded and his blood spurts over his body and makes him too a crimson confessor, as it were. The vision is that he, her noble young master, comes to Heaven and has no faith to offer to justify his admission except a cup in his hand. In that cup are his suffering, his unhappiness, what he has endured for Paulina. The slave girl asks of the head of the Christian community: Are sufferings, sorrows, enough to bring us into paradise? That, of course, is the question which is the main theme of the book and it

applies of course to our modern life. Is our residual ethical sensitiveness which is no longer by basic religious belief sufficient to bring redemption to the world?

This vision of the cup of sorrows is a fine image which the author evokes. She might have perhaps done a trifle better had she known another image from the old Hebraic law, an image which might have expressed her theme a little more closely. According to the old legend there are in the wall of Heaven three gates through which our human aspirations enter into the eternal paradise. One gate is the Gate of Prayer. All our devotions, the songs and the thoughts of our heart, enter before God through this Gate of Prayer. The second gate is the Gate of Repentance. Even when we do not pray our regret at evil done, our self-judgment at good neglected, such contrite thoughts go through the Gate of Repentance. Besides the Gate of Prayer and the Gate of Repentance, there is a third gate, the Gate of Tears. All our sorrows, all our sufferings also float up as on angel wings before God through the Gate of Tears.

Then, continues the legend, there are times when the Gate of Prayer is closed; there are times when the Gate of Repentance is closed—but the Gate of Tears is ever open. That is to say, eras come in the history of human thought when the human lips lose the power of prayer. The Gate of Prayer is closed. Even the conscious repentance of evil done or of good neglected does not stir the self-satisfied heart of man. The Gate of Repentance is then closed. But as long as a generation suffers, it can be stirred to human sympathy, and the Gate of Tears need never close. Which is another way of saying, and Gladys Schmitt has beautifully said it, that as long as we have the sensitiveness to suffer, the world may yet be redeemed from suffering. As long as we are men of good will, there can still be peace on earth.

SCHENLEY PARK

WITH the arrival of warm weather, and the subsequent beginning of the spring growing season, the biological survey of plant and animal life in Schenley Park has begun in earnest. This project was conceived for a very simple reason—a great many people like to know what to look for and what they're looking at! Schenley Park is full of people and many of them are interested in the world about them, yet there has never been a guide to the flora and fauna available to them. (Actually, the only publication available is a small guide to the trees and shrubs of the park.) Carnegie Museum is full of scientists, so why not provide a dependable, scientific, and attractive booklet to fill this gap? Furthermore, such a study might reveal interesting facts, heretofore concealed in our own back yard. So the project was born.

A committee surveyed the park and selected nine areas which they regarded as most typical of the varied aspects of the terrain; for instance, one area represents an open grassy meadow, another a wooded ravine, while a third is typical of a wood's edge. After these localities had been decided upon, detailed maps were prepared and the spots indicated on them. These maps were then distributed to the various laboratories that uniformity of effort could be achieved. It was suggested that each scientist assigned to the

Schenley Park project investigate the selected areas carefully, keeping in mind the reason for the selection of that particular site. Names were arbitrarily assigned to the areas to permit ready reference to them.

With the preliminaries completed, the next step was taken. Each section of the Museum selected a staff member for the task and a schedule was drawn up. Not more than one day a week of actual field work was considered sufficient, and on that basis the work got under way. The park authorities had been contacted, written permits were obtained for the staff, and full co-operation was assured. Much of the work will consist of observation rather than actual collecting, so little was involved in the way of equipment. With the aid of park naturalist Robert Chemus, the park employees, and the Biology department at the University of Pittsburgh, it is expected that the accumulation of information will be rapid. The research staff of the Museum is pooling its efforts, observations and, occasionally, specimens.

The staff members have indicated that they can complete their field work by late fall, and they will each submit a manuscript by the middle of December 1953. These manuscripts will then be co-ordinated and a report prepared. If all goes as planned, this publication will be scientifically accurate, attractively illustrated, and clearly written. It will provide a guide to the flora and fauna of Schenley Park that should open new horizons to the interested park visitor, but in addition it will give scientists a valuable picture of the wildlife of a large city area, which is vastly disturbed by human beings. Already some astonishing facts have been revealed, and the future promises even more.

—CAROLINE A. HEPPENSTALL

FROM THE PUNCH EXHIBIT



"... keep him in bed
another day or two."

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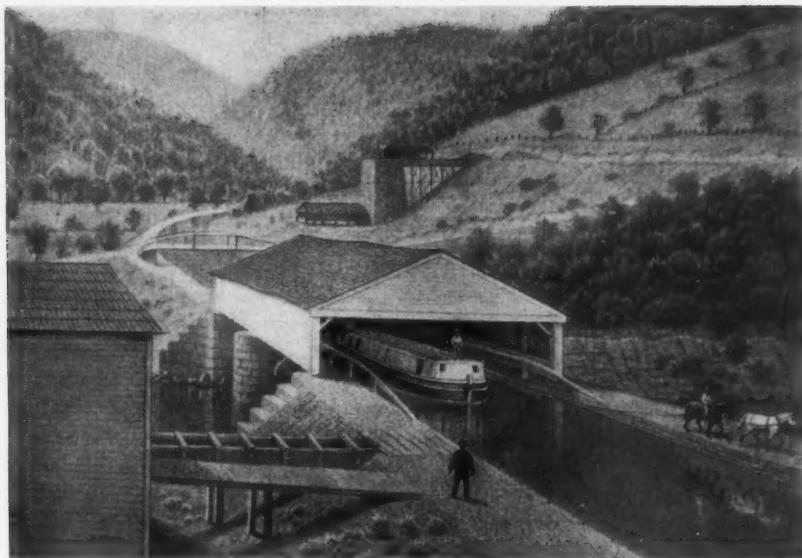
● Crackling-skinned suckling pigs and chickens, sweet potatoes and bananas are brought, still sizzling from the *imu* or underground oven. Salmon wrapped in tender taro leaves, tuna cooked in coconut milk, shrimp steamed with cabbage share table room with artful arrangements of mangoes, guavas and avocados. And pineapple—it's here in every imaginable form! As juice, as jam, as pickles, and best of all, as fingerfood throughout the meal.

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Historical Society of Western Pennsylvania

CANAL AQUEDUCT AT JOHNSTOWN NEAR SITE OF THE PRESENT RAILROAD STATION

THE MAIN LINE

SCHUYLER C. MARSHALL

CHARLES DICKENS thus described his arrival in Pittsburgh in 1842 on the state-owned Pennsylvania Canal:

"On the Monday evening, furnace fires and clanking hammers on the banks of the canal warned us that we approached the termination of this part of our journey. After going through another dreamy place—a long aqueduct across the Allegheny River, . . . a vast low wooden chamber full of water—we emerged upon that ugly confusion of backs of buildings and crazy galleries and stairs, which always abuts on water, whether it be river, sea, canal, or ditch: and were at Pittsburgh."

When the aqueduct, which he mentions, was being built in 1827, a correspondent

described it in the *Mercury* as "truly the pride and wonder of this part of Pennsylvania and perhaps of the United States." The aqueduct crossed the Allegheny where the Pennsylvania Railroad bridge now stands. The canal then ran down present Eleventh Street to Liberty and Grant, where the canal basin and numerous warehouses were located.

If Dickens had come to Pittsburgh a decade earlier, he could have continued his trip by boat across the city to the Monongahela. Although this section of the canal was in use for only a brief period, its location is of interest to Pittsburghers. From the canal basin the route ran along the eastern side of Grant Street to Seventh Avenue, where it turned left (east) and entered a tunnel at about Straw-

berry Way and Tunnel Street. The tunnel ran under Grant's Hill (then much higher) and emerged a little west of Tunnel Street, just south of Diamond. The canal then turned to the west on a straight line to Third Avenue, where it veered once more to the east and ran directly to the Monongahela, terminating near the Liberty Bridge.

The canal across Pittsburgh was abandoned very shortly, although legend has it that it served as a hiding place for robbers until the Civil War, when the Pennsylvania Railroad (whose tunnel met the canal tunnel at one point) blocked it up.

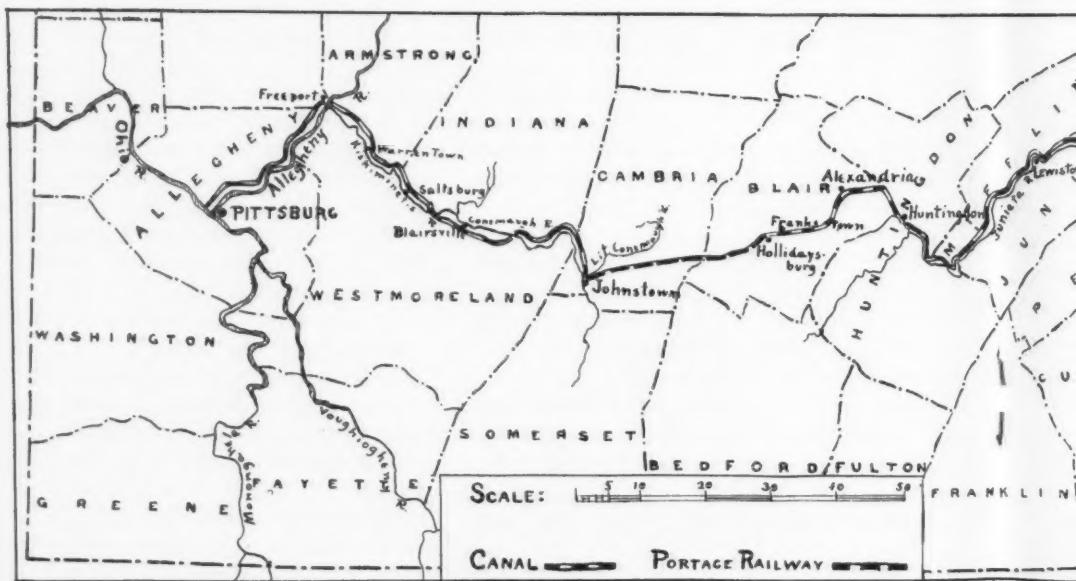
The Main Line of the Pennsylvania Canal ran from Pittsburgh to Philadelphia. There were various branch lines, some never completed, others barely begun. From Pittsburgh the canal crossed the Allegheny, as we have seen, to Allegheny town (North Side). It ran along the western side of the Allegheny to the

Kiskiminetas, where it again crossed the river by an aqueduct.

The canal followed the Kiskiminetas and Conemaugh to Johnstown. From Johnstown to Hollidaysburg, over the Allegheny Mountains, the passengers and freight were carried by the famous Portage Railroad. This railroad consisted of ten inclined planes, five on each side of the mountains, with various level stretches in between. Cars were pulled up and let down the inclined planes by stationary steam engines. On the level stretches horses, and later locomotives, pulled the cars.

From Hollidaysburg the canal followed the Juniata valley to that river's junction with the Susquehanna, and ran down the western side of the latter river to Columbia. The last part of the journey, from Columbia to Philadelphia, was completed by railroad.

One of the better accounts of travel over the Main Line is that of Philip H. Nicklin,



PENNSYLVANIA CANAL AND PORTAGE RAILWAY

despite his title, *A Pleasant Peregrination through the Prettiest Parts of Pennsylvania*. The title apparently did not include Pittsburgh, which he found "ugly." "The government of the town seems to have been more intent on filling the purses, than providing for the gratification of the taste, or for the comfort of its inhabitants."

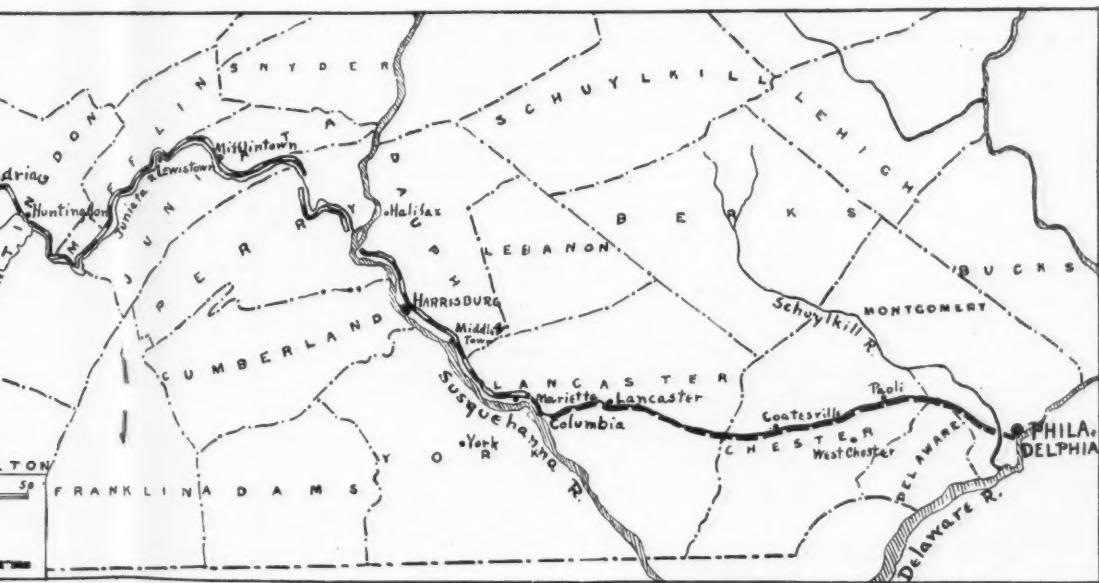
On a summer evening in 1835 Nicklin left Pittsburgh on the canal packet *Cincinnati*. He could see little that night on the trip up the Allegheny.

"At five o'clock the next morning we crossed the Allegheny through an aqueduct which carries the canal over that river to the northern bank of the Kiskiminetas, the course of which the canal now pursues in a south eastern direction. . . .

"At 2 P.M. we passed over a beautiful stone aqueduct which leads the canal into the mouth of a large tunnel eight hundred feet

long, which perforates the mountain and cuts off a circuit of four miles. The tunnel is cut through limestone rock for four hundred feet, and the rest is arched with solid masonry. The canal and tow-path both pass through the tunnel, the approach to which is most interesting. You are gliding over the aqueduct admiring the scenery; on a sudden you seem to be rushing against the steep side of the mountain, and then to your great astonishment you perceive an enormous archway which passes through the mountain's base, and discovers the brilliant landscape beyond, set in a dark frame, composed of the massy ribs of rock dimly seen within the tunnel, upon which the mountain securely rests. . . ."

Early the next morning the packet reached Johnstown, where the travelers changed to cars of the Portage Railroad. From Johnstown to the first inclined plane there was a



PENNSYLVANIA CANAL AND PORTAGE RAILWAY

Archer Butler Hulbert's *Historic Highways of America* Vol. 13

four-mile "level," as it was called, although it ascended one hundred feet during its course.

"As soon as we arrived at the foot of plane No. 1, the horses were unhitched and the cars were fastened to the rope which passes up the middle of one track and down the middle of the other. The stationary steam engine at the head of the plane was started and the cars moved majestically up the steep and long acclivity in the space of four minutes; the length of the plane being sixteen hundred and eight feet, its perpendicular height, one hundred and fifty, and its angle of inclination $5^{\circ}42' 38''$.

"The cars were now attached to horses and drawn through a magnificent tunnel nine hundred feet long having two tracks through it, and being cut through solid rock nearly the whole distance. Now the train of cars were attached to a steam tug to pass a level of fourteen miles in length. This lengthy level is one of the most interesting portions of the Portage Rail Road, from the beauty of its location and the ingenuity of its construction. It ascends almost imperceptibly through its whole course, overcoming a perpendicular height of one hundred and ninety feet, and passes through some of the wildest scenery in the state; the axe, the chisel and the spade having cut its way through forest, rock and mountain. The valley of the little Cone-maugh river is passed on a viaduct of the most beautiful construction. It is of one arch, a perfect semicircle with a diameter of eighty feet, built of cut stone, and its entire height



Historical Society of Western Pennsylvania
SECTIONAL CANAL BOAT AT THE TOP OF AN INCLINE NEAR CRESSON

from the foundation is seventy-eight feet six inches. When viewed from the bottom of the valley, it seems to span the heavens, and you might suppose a rainbow had been turned to stone."

Four more inclined planes, with levels between each, carried the traveler to the summit.

"Three short hours have brought you from the torrid plain, to a refreshing and invigorating climate. The ascending apprehension has left you, but it is succeeded by the fear of the steep descent which lies before you; and as the car rolls along this giddy height, the thought trembles in your mind, that it may slip over the head of the first descending plane, rush down the frightful steep, and be dashed into a thousand pieces at its foot.

" . . . The descent on the eastern side of

Mr. Marshall has done considerable research on the Pennsylvania Canal in the course of graduate study at Pennsylvania State College and the University of Pittsburgh. He is now in the accounting department of Jones and Laughlin Steel Corporation, one of whose founders operated a line of boats on this Canal.

the mountain is much more fearful than the ascent on the western, for the planes are much longer and steeper, of which you are made aware by the increased thickness of the ropes; and you look down instead of up."

For a taste of passenger life aboard a canal packet we may turn to Dickens' *American Notes*. Dickens boarded a packet at Harrisburg on a rainy day in 1842.

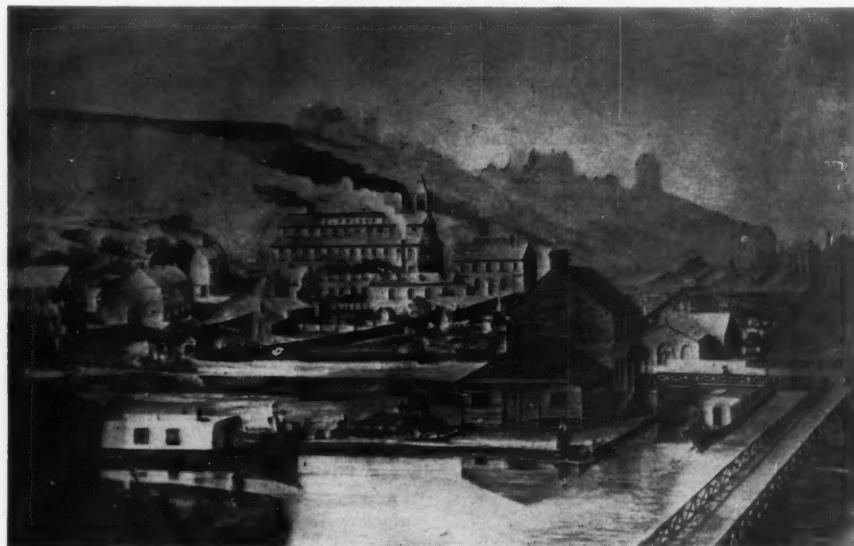
"However, there it was—a barge with a little house in it, viewed from the outside; and a caravan at a fair, viewed from within: the gentlemen being accommodated, as the spectators usually are, in one of those locomotive museums of penny wonders; and the ladies being partitioned off by a red curtain, after the manner of the dwarfs and giants in the same establishments. . . .

"We sat here, looking silently at the row of little tables, which extended down both sides of the cabin, and listening to the rain as

it dripped and pattered on the boat, and splashed with a dismal merriment in the water. . . . [After a brief delay] a train of three horses was attached to the tow-rope, the boy upon the leader smacked his whip, the rudder creaked and groaned complainingly, and we had begun our journey."

The menu that evening consisted of "tea, coffee, bread, butter, salmon, shad, liver, steaks, potatoes, pickles, ham, chops, blackpuddings, and sausages," which was repeated at breakfast the next morning, while the noonday meal was varied by omitting the tea and coffee.

"By the time the meal was over, the rain, which seemed to have worn itself out by coming down so fast, was nearly over too; and it became feasible to go on deck: which was a great relief, notwithstanding its being a very small deck, and being rendered still smaller by the luggage, which was heaped



Pennsylvania Room, Carnegie Library of Pittsburgh

TERMINUS OF THE CANAL IN PITTSBURGH, WHERE PENNSYLVANIA STATION STANDS TODAY

together in the middle under a tarpaulin covering; leaving, on either side, a path so narrow, that it became a science to walk to and fro without tumbling overboard into the canal. It was somewhat embarrassing at first, too, to have to duck nimbly every five minutes whenever the man at the helm cried 'Bridge!' and sometimes, when the cry was 'Low Bridge,' to lie down nearly flat."

That night Dickens slept on what he described as a hanging bookshelf, "designed apparently for volumes of the small octavo size."

"Between five and six o'clock in the morning we got up, and some of us went on deck, to give them an opportunity of taking the shelves down; while others, the morning being very cold, crowded round the rusty stove, cherishing the newly kindled fire, and filling the grate with those voluntary contributions of which they had been so liberal all night. [This last is a reference to the spitting habits of the American male, which practically every European traveler of the century noted.] The washing accommodations were primitive. There was a tin ladle chained to the deck, with which every gentleman who thought it necessary to cleanse himself (many were superior to this weakness), fished the dirty water out of the canal, and poured it into a tin basin, secured in like manner. There was also a jack-towel. And, hanging up before a little looking-glass in the bar, in the immediate vicinity of the bread and cheese and biscuits, were a public comb and hairbrush."

In spite of various inconveniences Dickens found certain aspects of the trip rewarding.

"Even the running up, bare-necked, at five o'clock in the morning, from the tainted cabin to the dirty deck; scooping up the icy water, plunging one's head into it, and drawing it out, all fresh and glowing with the cold; was a good thing. The fast, brisk walk

upon the towing-path, between that time and breakfast, when every vein and artery seemed to tingle with health; the exquisite beauty of the opening day, when light came gleaming off from everything; the lazy motion of the boat, when one lay idly on the deck, looking through, rather than at, the deep blue sky; the gliding on at night, so noiselessly, past frowning hills, sullen with dark trees, and sometimes angry in one red burning spot high up, where unseen men lay crouching round a fire; the shining out of the bright stars undisturbed by noise of wheels or steam, or any other sound than the limpid rippling of the water as the boat went on; all these were pure delights."

When the Main Line of the Pennsylvania Canal was opened in 1834, it was already apparent to many that the beginning railroads would offer it serious competition, and this became ever more obvious as time went by. In the late 'fifties the newly formed Pennsylvania Railroad bought the Main Line, which was disbanded as the railroad replaced successive sections of it.

Wagons replaced by canals, canals by railroads, and railroads by automobiles and airplanes—the story has been repeated many times, and one must bow to the modern demand for speed. But when trapped downtown at 5:00 p.m., one can't help feeling how much quieter—and, perhaps, quicker—it would be to glide pleasantly under Grant's Hill.

[Three scale models of old canal craft are included in the transportation exhibit on the third floor at the Museum: the *Pittsburgh*, the *Jennie Bingham of Freeport*, gift of Mrs. S. A. Cunningham, and a model lent by D. Rhine of a boat built in sections to travel the old portage route between Philadelphia and Pittsburgh. These sections were uncoupled at Hollidaysburg, then taken over the mountains by railway and inclined plane, to be reassembled on the western side.]

KING-SIZE HOUSEKEEPING

JAMES L. AUSTIN

WHEN a male of the species *homo sapiens* steps across the fence to discuss the homemaker's art of keeping house, he but deserves his resultant wretched lot. His effort can enjoy little prospect of sympathetic acceptance, since fellow males will regard him with suspicion and females with open contempt. But when the house being kept is such that it presents a whole raft of unfamiliar problems, he has a fighting chance to command limited credence for his labors and is given sufficient courage to proceed.

For instance: What modern housekeeper, even in this bright day of artificial illumination, can boast of using 18,618 light bulbs in her house a year?

And how would you go about making a comparison between cleaning a towering dinosaur fossil and dusting milady's dainty Dresdens?

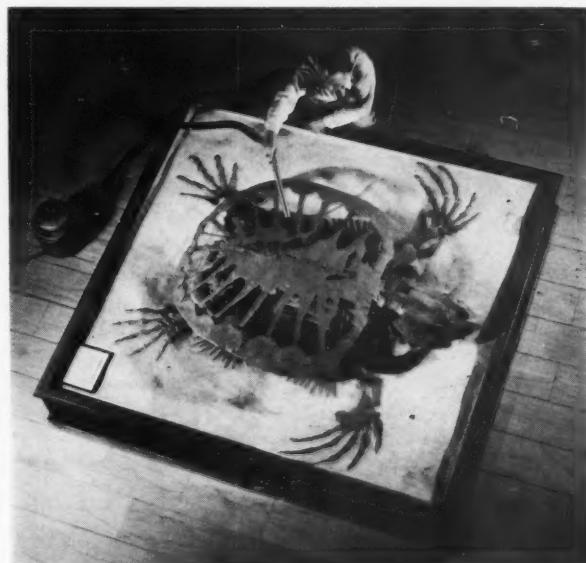
Or, if Mrs. Housekeeper went through some ten tons of soaps and detergents in her yearly cleaning chores, imagine the colossal requirement of that other aid to cleaning—elbow grease!

These figures are unusual because the house in this case is no suburban bungalow. It is the sprawling greystone building on Forbes Street that houses Carnegie Institute and central Carnegie Library of Pittsburgh. Its marble halls and priceless collections require the unending attention of cleaning and maintenance personnel. Unkempt houses have few visi-

tors, and empty halls in a cultural institution are the worst form of a director's nightmare.

Most Pittsburghers know that Carnegie Institute and Library were the gift of Andrew Carnegie to Pittsburgh. The first structure, including the central Library, in which were housed limited Fine Arts and Museum facilities, and the Music Hall, was opened to the public in 1895. In 1907 Mr. Carnegie added the present Fine Arts and Museum quarters, plus the magnificent Music Hall Foyer. The Library was turned over to the City of Pittsburgh for maintenance and operation, while the Institute was endowed with funds which until recent years were sufficient for its operation.

It is difficult to visualize the enormity of



CLEANING PROTOSTEGA, A FOSSIL MARINE TURTLE FROM KANSAS, IS ONE OF THE INSTITUTE HOUSEKEEPING CHORES

floor area in the building, particularly since it is in the mean only three stories high. Its 586,000 square feet of floor space amount to over 13 acres, or to the urbanite, about 78 city lots measuring 50 by 150 feet. The exterior is of grey sandstone and designed in a modified Italian Renaissance style. The interior is a veritable paradise for marble fanciers. With the exception of the Tennessee marble at the Library entrance, all other types were imported from the Mediterranean area—Hauteville and Eschallion marbles from France, Pentelic from Greece (of which the

Parthenon was built), light and dark Sienas and Istrian from Italy, and Red Numidian from Algeria, to name a few.

The building in many respects is completely self-sufficient in its operation. Steam for heating and running much of its heavy mechanical equipment comes from the immediately adjacent Bellefield Boiler Plant, a co-operative enterprise shared by the Institute, Library, Mellon Institute, and the University of Pittsburgh. In addition, the plant supplies the heating needs of four hospitals, the Board of Education, Young Men's and



she was trapped by a wall of words

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Women's Hebrew Association, and Phipps Conservatory. The five large generators in the Institute's basement produce direct current for two-thirds of the building's electrical needs, two million kilowatt hours a year—enough electricity to illuminate a 60-watt bulb continuously for over four thousand years. These electric generators, installed at the turn of the century when no electric service was available in the Oakland area, have long been obsolete and must be replaced by more modern and economical facilities, involving a substantial capital outlay.

Keeping the interior of the building operating and presentable for its hundreds of daily visitors is a mammoth task, requiring staffs of engineers, janitors, carpenters, a laundry, refrigeration plant, and various repair shops. Strange-sounding materials are required, such as a fine scouring powder of volcanic ash to clean and yet preserve the acres of smooth marble floors, and the oxalic-acid solution used by the stout-hearted men who climb the upper ramparts to clean the 100,000 square feet of skylight glass. Sixty gallons of polish a year keeps door-handle and handrail brass gleaming. Visitors use nine thousand cakes of toilet soap a year washing their hands, and a million paper towels drying them. In a building of the Institute's age, the plumber, the electrician, the painter, and other craftsmen are constantly in hand-to-hand combat with Father Time, doing their utmost to delay the day when expensive systems in toto will have to be replaced. In 1952, the budget for operating and maintaining just the building facilities amounted to \$459,000.

A highly specialized and tedious part of Institute and Library housekeeping is the

Mr. Austin has handled public relations for Carnegie Institute and been executive secretary of the Carnegie Institute Society the past five years. He is a graduate of the University of Florida.

task of keeping the millions of specimens and books in exhibitable and usable cleanliness. Hermetically sealed cases and glass coverings keep many objects free from dust and deterioration year after year, but others—from Mammoth and dinosaur fossils to the bust of Homer—are out in the open and need constant attention. Those of us who have battled the dust problem in a small home library can appreciate the demands made upon maintenance personnel by Carnegie Library, "the house of a million books."

The plaint, "Woman's work is never done," applies to the task of keeping house at the Institute, too. On only four days a year is the building closed to the public, and even then some maintenance personnel is required. The building is never without an attendant at the receiving gate and in the tile-walled engine room. In the deep of night when the city sleeps, watchmen with flashlights and time clocks move constantly on their rounds through eerie halls, past the silent statues of man's early handiwork, past the natural stone fossils of prehistoric beasts, past the accumulated knowledge of all time and history in Library bookcases, on guard against damage or loss to priceless treasures of literature, art, and science. During the day a staff of guards is on hand to aid the visitor in his quest for knowledge and recreation, as well as to restrain souvenir collectors and others whose fingers stray toward forbidden nuggets.

At the end of the day, the final housekeeping chore seen by visitors and passers-by takes place on the lawn beside the Music Hall. Two members of the maintenance staff lower the 12- by 20-foot flag from its place 150 feet above the Oakland landscape and fold it away for the night. Pittsburghers might well say, "Long may it wave," as its presence means that the doors to one of the world's finest cultural centers are still open to the people of this great community.

MAYFLOWER 1-7300

EXT. 258, NEIL RICHMOND SPEAKING

I'VE actually seen a picture of a hoop snake even though there ain't no such animal! Several years ago Paul L. Swanson, one of the leading amateur herpetologists in western Pennsylvania, and one, it might be added, with an excellent sense of humor, published an April Fool hoop-snake article. In preparation for this article he had gone to the trouble of preserving a pilot black snake with its tail inserted into its mouth. After the specimen was well hardened in formalin it was a simple matter to have an assistant roll it down slope in hoop fashion while photographs were taken of it. Although the article was clearly a hoax, some readers failed to appreciate this fact, and some of those who query Carnegie Museum today about hoop snakes mention the photographs that they recall seeing long ago.

I have no hesitancy in stating unequivocally that the hoop snake exists only in popular folklore and has no basis in fact, but I labor under no illusion that this dull but nonetheless scientifically accurate answer will ever eradicate the hoop-snake myth. So long as there are campfires and stories are told around them, some wide-eyed listener will be spoofed with tales of the snake that takes its tail in its mouth.

Hoop snakes are to snake stories what Paul Bunyan is to logging stories, and of all the snake myths this one has the distinction of being strictly native to North America. But even so, in an age when flying saucers get all the headlines, hoop snakes and sea serpents are having a difficult time maintaining a following.

Most of the questions directed to the section of herptiles at the Museum, however, deal with the real and living rather than with

the colorfully fictitious. Every herpetologist is aware of the fact that dread of snakes is in no wise correlated with lack of interest in them. On the contrary, fear may heighten interest, for every museum and zoo can testify to widespread public interest in reptiles.

At this season of the year—circus time—questions about "chameleons" almost monopolize our telephone. Actually these bright-eyed, bright green little lizards, which are sold by the thousands by circus hawkers and pet shops, are not chameleons but anoles. This distinction may sound like a technicality but it makes quite a difference if you are trying to find them in a reference work or encyclopedia to answer a child's practical questions about how to care for a newly acquired specimen. The true chameleon is an Old World lizard with strange turret-mounted eyes, rarely seen in this country and difficult to keep alive without a dependable supply of exotic insects.

The anole, on the other hand, represents one or another of several species of lizards that are abundant in the southeastern United States and tropical America. Anoles make excellent pets if the owner caters to their predilection for lapping drops of water from vegetation. Many unfortunates die of thirst in captivity before they learn that liquid water in a dish is drinkable. They have no preference for sugar water which is sometimes recommended by salesmen, and they fare poorly on dried foods. They may flourish during the warm months on house plants reasonably infested with small insects, or in a moist, planted terrarium in which outdoor sweepings of small flies and other insects may be released. A male anole well established in such environs makes a striking and interest-

ing pet especially if stimulated by a companion to flash its brilliantly colored dewlap as it clings to a sun-dappled branch.

Anoles have their season, but baby turtles are always with us. Herpetologists find them fascinating but rarely accord them the loving and often over-solicitous care provided by the public. Turtles of all sizes make interesting pets. Currently there are two thoroughly readable books on the turtles of this country that contain basic information on the care and feeding of native species. These are *Turtles of the United States and Canada* by Clifford H. Pope, and *The Handbook of Turtles* by Archie Carr.

If you would join the ranks of turtle fanciers don't buy a turtle that has been enameled or painted, for unless this growth-retarding and sometimes poisonous strait jacket is removed promptly the unfortunate turtle usually succumbs. Even if the paint is carefully chipped away it may already have interfered with normal growth so seriously that a deformed upper shell results.

Even the healthiest turtle will not survive very long if forced to restrict its dietary to the dried ant eggs or other uninteresting food often sold as "turtle food." Different species of turtles and different individuals of the same species vary in their feeding habits and requirements, but most of the commonly marketed species will eat one or more of the following foods: canned or frozen dog or cat food, bits of lettuce, spinach or other greens, especially if softened by dunking in boiling water, small pieces of fish or meat, bits of

Mr. Richmond, who is associate curator of herptiles, joined the staff in July 1951 when the Museum's Pennsylvania Herpetological Survey was launched under sponsorship of the Sarah Mellon Scaife Foundation. From 1946-51 he was field supervisor for the Survey of Pennsylvania Mammals, a joint project of Carnegie Museum and the Pennsylvania Game Commission, in co-operation with the United States Fish and Wildlife Service.

fresh watermelon rind. Even on such a nutritious and varied diet, however, either occasional exposure to sunlight or some vitamin substitute appears necessary to prevent a condition of rheumy eyes that can be alleviated by bathing them with weak boric-acid solution.

One of the more unusual turtle inquiries of the past year came from a lady who asked, "How do you tell when a turtle is dead?" After this question was answered, she expressed astonishment that death had come to her pet which had been carefully provided with a bed of its own, furnished with blanket and sheets that were changed daily, and given only distilled water to drink.

One turtle question still has me stumped: "What does a turtle look like out of its shell?" The only mental picture I could produce of a turtle in such a condition was turtle soup. Unique among all animals the turtle has managed to get inside of its ribs so when the shell is removed, the ribs and backbone which are a part of the shell are also removed and all that remains is a few pounds of turtle meat.

Snakes are a good example of truth being stranger than fiction. Certainly snake facts are more remarkable than the many snake superstitions.

For example, snakes are deaf, have very poor eyesight, and have no visible means of locomotion. Yet as a group they manage to live in a great variety of conditions. Some are excellent climbers while others are good swimmers, and still others spend their entire life burrowing in the ground. One tropical species has learned to glide from tree to tree! Their teeth are merely sharp points, not suited for chewing or biting off pieces of food, so they swallow their prey whole.

Most snakes can swallow prey much larger in diameter than the snake, a remarkable feat that is made possible by an elaborate system

of expansion joints in the jaws. Some of the poisonous snakes have developed a pair of hollow tubular teeth—the fangs—that are excellently designed needles for injecting poison.

The tongue of a snake is a delicate sensory device, not a stinger, and is so delicate that when not in use it is retracted into a sheath in the floor of the mouth. Some snakes have even developed special sense organs for detecting radiant heat, and so can locate warm-blooded prey in the dark. By the time we learned to use infra-red to "see" in the dark, during the last war, it had been old stuff in reptile circles for several million years. Probably the most bizarre development of all has been produced by the rattlesnakes—they grew a buzzer on the end of their tail.

Answering questions is so much a part of the work of this section that several years ago a study was made of the questions most frequently asked. The answers to these and similar questions were then compiled into an "answer book" which is kept within easy reach of the telephone. It is kept up to date with new additions to knowledge and new trends in questions. Currently it contains such diverse bits of information as: the largest known sea turtle—leatherback, length about six feet, weight up to about 1,400 pounds; kinds of poisonous snakes in Korea—three (same number as in Pennsylvania); miscellaneous lists ranging from the reptiles of Formosa to the sources of antivenin in each country.

Like all sections in the Museum we get our share of "What is it" questions. This often has to do with a small snake that has bands on it and "looks like a copperhead." The snake in question is either in a jar in the garage or was thrown away yesterday. All my efforts to get a description of it end up with "it looked like a copperhead." If any part of the snake is still extant I suggest that

it be saved so that it can be definitely identified. If it has gone out with the rubbish, all I can do is suggest that the next one, if any, be saved.

Whenever it is important that a specimen be accurately identified, it should be saved for examination. This is especially true of snakes that have bitten someone. With poisonous snakes a positive identification can be made even though the snake has been thoroughly mangled. In many cases it is possible to identify a small scrap of a shed skin, yet it is almost impossible to identify a snake from its telephone description.

We also have a selfish reason for wanting to examine specimens. We never know when a rare species will turn up, and specimens brought or sent in for identification are the source of much interesting information, not only about uncommon species, but about common species in unusual places.

One last thought to those who have difficult questions. Do not be surprised if the answer is "I don't know." If all the answers were known and could be found in books there would be no need for laboratories, and your call would be referred to the nearest library.

FROM THE PUNCH EXHIBIT



"Oh dear, that means all those wretched horses and dogs will be streaming through here again."

THE JOY OF LEARNING

Conducted Tours

WILLIAM SMITH

A TRIP to Carnegie Institute is fast becoming part of the curriculum in tri-state schools. Almost every weekday from September to June one may see large busses from western Pennsylvania, eastern Ohio, and northern West Virginia parked in the vicinity of the impressive building. From the busses emerge hordes of eager children of all grades who pour into the building, eyes and minds alert, to record new impressions of the world in which they live. Many of these children are enjoying their first ride in a big bus, their first visit to a big city, and are seeing for the first time the wonders and treasures of a large museum. The number of such visitors builds up during the three autumn months, falls off during the winter, rises to a peak during April and May, and drops to a trickle in July and August.

It is interesting to study the expressions on the faces of our small visitors, and to listen to their comments. One little girl recently exclaimed as she entered the building and saw the marble walls and floors, the great stairway, and the view into the Hall of Sculpture, "My it's like a beautiful palace!"

Some groups tour the Museum under the guidance of their own teachers. Many teachers feel that the boys and girls will derive greater benefit if they are escorted by one of our instructors who is more familiar with the departments and exhibits. To have one of our staff members guide the tour, arrangements must be made in advance with the Division

Mr. Smith joined the Education staff in 1950 on his retirement from teaching Biology at Schenley High School. A graduate of the University of Pittsburgh, he served as part-time instructor there 1918-32.

of Education: Jane A. White's office for tours on natural history, and Margaret M. Lee's office for tours concerning art exhibits. In making an appointment, the time of the visit to the Museum, the number and grade of the group, and the subjects in which instruction is desired should all be stated, either in a letter or by phone. As far as possible, tours are adapted to the age and grade of our visitors. Grade-school pupils are taken on general tours over the entire Museum. Very young children are delighted with the families of baby animals in the Student Museum and are impressed by the larger animals in the Hall of Mammals on the second floor. Special tours for elementary groups are frequently requested, such as: Mammals and Birds, Prehistoric Animals, Insects and Water Animals, American History, and Geography. High-school groups usually ask for Biology tours that enable them to see actual specimens of many of the plants and animals about which they have already studied in their classrooms.

Interest in the fossils of prehistoric animals is always great. Pupils marvel at the size of the great dinosaurs and shudder before the life-size portrait of the mighty *Tyrannosaurus Rex*, with his great gaping mouth filled with long sharp teeth. They are surprised to learn that types of camels, rhinoceroses, and elephants once roamed over North America, and that, although the Indians had no horses when the first white explorers reached the continent, there actually were horses here in prehistoric times. One girl recently asked, "How are these great skeletons brought in here?" The great murals of these animals are

always admired and draw forth such questions as, "How long did it take the artist to paint that picture?" and "How much is it worth?" The painting of the animals in the tar pits of Rancho la Brea is made much more realistic by the four skeletons near by that were actually taken from the tar pits.

In animal exhibits, characteristics used in classifying are pointed out, adaptations fitting animals to their environments and modes of life noted, and associations between different species such as ants and aphids, or staphylinid beetles in termite colonies explained. The enlarged models of insects interest many students. The cases showing social insects—ants, bees, and termites—give an excellent idea of the different forms of individuals comprising the colonies and their modes of life. Among the models of exotic

bugs, students are intrigued by the "television bug," which seems to have a TV antenna on his back, and a "balloon bug," with his inflated sac that surely must aid him in flying.

Classes requesting History tours are shown the Indian exhibits, the Conestoga wagon, models of early methods of transportation, and animals encountered by the pioneers. If Geography tours are desired, in so far as possible, animals from different areas of the world are shown.

Students who are taken on guided tours usually have a better understanding of the Museum and its exhibits. They learn many things that might otherwise be overlooked and in addition they acquire knowledge about the work of the Museum and the part it may play in the life of the community it serves.

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ART AND NATURE BOOKSHELF

M. GRAHAM NETTING

LONDON'S NATURAL HISTORY

By R.S.R. FITTER

Collins, London, 1945. (21 s.)

282 pp., 52 color photographs, 41 black and white photographs, 12 maps and diagrams.

THREE factors—the Museum's present inquiry into the natural history of Schenley Park, the Fine Arts' current exhibit of drawings from *Punch*, and widespread interest in the coronation ceremonies—have impelled me to backtrack a few years to review a book first published in 1945.

London's Natural History is a remarkable book in a remarkable series. The New Naturalist Series was inaugurated about a decade ago under the direction of a distinguished editorial board "to interest the general reader in the wild life of Britain by recapturing the inquiring spirit of the old naturalist." Each of the 22 titles issued thus far is lavishly illustrated but retails at 21 shillings abroad. Comparative costs being what they are, I don't expect American publishers to offer so many color plates for so little, but they might ponder the fact that clarity can be achieved without slashing factual content down to the level of a retarded twelve-year-old. During twenty years of reviewing I have stubbornly maintained that science is intrinsically interesting and, if presented ably, requires no "dramatization" or "popularization." *The Sea Around Us*, with sales exceeding two million, supports my contention.

It is perhaps significant that the present volume was written by a social scientist and writer who has been a naturalist all his life, but not a professional biologist. This happy combination of skills has resulted in a volume of absorbing interest which documents the interrelationships of plants and animals with

man in "the largest aggregation of human beings ever recorded in the history of the world as living in a single community."

Fitter begins several hundred million years "Before Londinium," summarizes the geological history of the area, refers to relatively recent plant and animal fossils, correlates early men with climatic fluctuations, and reaches A.D. 43 by page 27—no mean achievement. The question of whether London existed before Aulus Plautius arrived is of less interest in this context than the fact that the first African elephants to set foot on British soil accompanied him, and some weeds that outlived them probably arrived simultaneously as accidentals.

London "emerges from the fog of tradition into the light of written history in A.D. 604," and from thence forward documented natural history becomes increasingly frequent and impressive. A Pittsburgh naturalist working with scraps of information about local zoology a mere century ago can't escape envy in reading of the Domesday Survey in 1086, swan-keeping in 1186, and a closed season on salmon in 1285!

The Wen, as Cobbett called London, began its inexorable spread over the countryside of Middlesex and Surrey about 1500 and burst explosively outward in the mid-nineteenth century. The two chapters devoted to these growth periods are lengthy and well stocked with examples of the changing fortunes of animals and plants.

By the eighteenth century, interest in plants was being accepted as rational, but the same broadmindedness did not extend to insects, for "the unfortunate Lady Glanville, from whom the scarce Glanville fritillary (*Melitaea cinxia*) takes its name, had her will

unsuccessfully disputed on the ground that as she had been interested in butterflies she could not have been in her right mind."

London, the author believes, has "the largest area in the world of an entirely new type of habitat, the wholly built-up area." Yet even in this desert enough plants and animals occur to merit a separate chapter. Of birds, the largest animals fully adapted to this novel environment, only two species are typical of London's central core, "the house-sparrow and the semi-feral London pigeon, both of which can support themselves without ever setting eyes on a blade of grass or a green leaf." The house sparrow is the Londoner's favorite and "the only bird allowed by general consent to be a Cockney," but the pigeon is no mean runner-up for it has been in London at least since 1385!

Other chapters are devoted to nature indoors, gardens and parks, the effects of digging for building materials, the cult of nature, and the influences of water supply, refuse disposal, food-getting, and sport.

Fitter chides London botanists for neglecting opportunities to study the flora of waste sites, parks, and railway embankments, but there is inherent testimony that ornithologists have neglected few areas. "So well known are sewage farms among bird enthusiasts as the haunts of rare birds, that it is on record that a lady once asked the manager of a sewage farm near London, which she was visiting with a party of naturalists, what sewage farms were really for."

Although the first golf course in the London area was made in 1608, it was not until the late 1880s that these extensive islands of grassland within built-up areas became numerous enough to be biologically significant. Increase in playing fields and golf

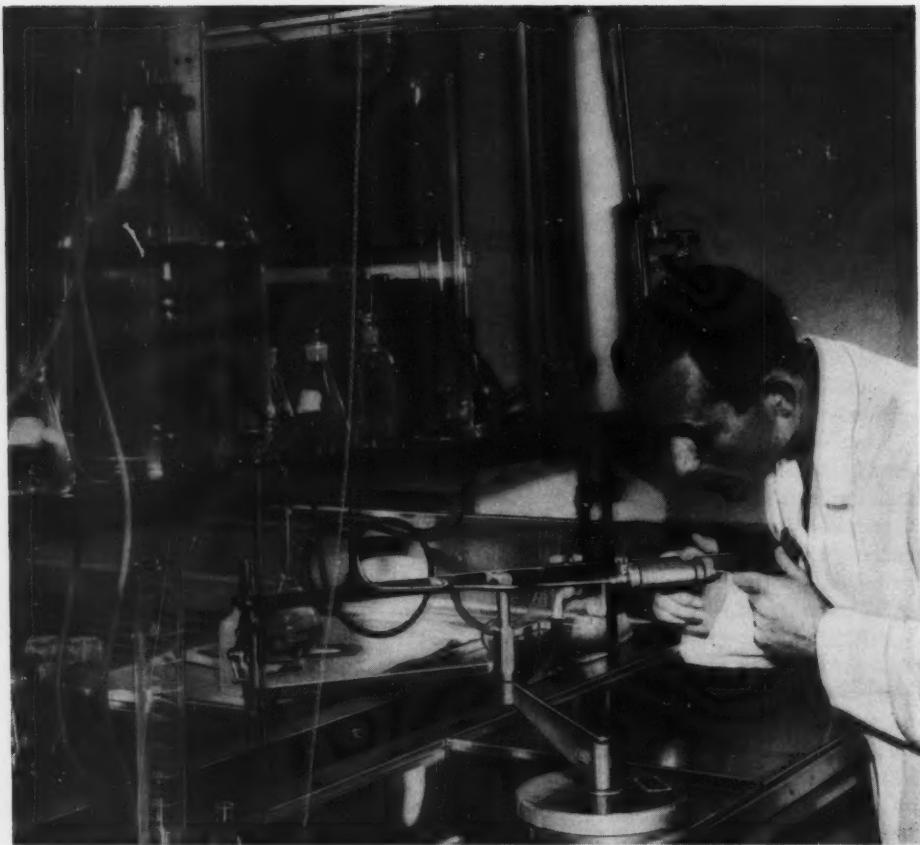
Dr. Netting, the assistant director of Carnegie Museum, has done research on both urban geography and urban zoology. He also serves as curator of herptiles.

courses not only provided sanctuaries for wildlife but also meant a drastic shift in sport emphasis from hunting "game" to playing games. Today "the area of open country where it is possible to take out a gun and have pot-shots without the danger of peppering a courting couple behind a hedge is continually decreasing near London." Even so golf has not eliminated traditional English sports, for just prior to World War II there were twenty-two important packs of foxhounds, beagles, harriers and otterhounds operating within twenty miles of St. Paul's!

Chapter 18, which is devoted to "The Influence of the War," contains many references to the behavior of animals during the "blitz." "Nightingales are well known for their indifference to gunfire, which indeed they often seem to regard as a particularly vigorous rival nightingale trying to muscle in on their territory. . . ." The London rocket, a plant that grew abundantly on the ruins after the Great Fire in 1666, did not appear after the Great Fire of 1940. Its place, following the holocaust, was taken by the rose-bay willow-herb, which is accompanied by elephant hawk-moths.

I have skipped much of interest, but I cannot conclude without mention of the appendices, which are of especial interest to biologists.

After reading this volume, I find myself impressed by two things: first, the tremendous ability of plants and animals to survive in close proximity to man, under the most adverse urban conditions; and second, the tremendous usefulness of records that may appear inconsequential at the time but achieve greatest worth to naturalists decades or even centuries later. I can only hope that the collections and records Carnegie Museum is amassing today may some time be incorporated in a volume on Pittsburgh natural history half as complete as this.



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